

that is, "normal" carriers of the gene? The answer is, about one in seventy. Let us suppose all albinos were prevented from breeding. How long would it take to reduce the incidence of albinism to half its present value, that is, to one in 40,000? Dr. Falconer shows that it would take about fifty-nine generations—say, 1,500 years. With more serious defects, which are less common than albinism, the rate of progress would be still slower. This argument, however, ignores mutation: to the extent that mutation contributed to the store of unwanted genes, progress would be slower still; some rare, gravely disadvantageous conditions are kept in being entirely by mutation.

Further complication arises when we come to the kind of situation in which selection favours the heterozygote. Dr. Falconer deals lucidly with this, possibly very important, phenomenon. The simple argument concerning gene frequencies, applicable to cases such as albinism, breaks down before the finding that many genes have frequencies quite different from those to be expected from a straightforward balance between selection and mutation. This condition, known as polymorphism, is probably, as a rule, due to the superiority of the heterozygote over both homozygotes. This may be the basis of heterosis, or hybrid vigour, with its obverse, namely, inbreeding depression. All these topics are clearly and logically presented by Dr. Falconer. Each, incidentally, is part of the knowledge essential for any scientific programme of eugenics or animal breeding.

The book is, however, not directed solely or mainly to people interested in human genetics or in scientific stockbreeding (even though it is essential reading for them). The teacher, undergraduate or research worker can consult it for simple, mathematical definitions of such terms as heritability, coefficient of selection, selection differential and response to selection. The different aspects of variance, likely to be encountered by many research workers, are instructively presented. Dr. Falconer has the valuable qualification of being primarily a biologist, interested in the empirical problems presented by living things; his concern with mathematics is pragmatic, and biologists need not be daunted by his equations.

This book ought to have much influence: above all, it should end the habit of presenting elementary biology without giving even a glimpse of quantitative genetics.

S. A. BARNETT

Peters, James A. (Editor). *Classic Papers in Genetics*. London, 1959. Prentice-Hall International. Pp. vi + 282. Price 30s.

FOR ADVANCED STUDENTS, the textbook teaching of genetics has to be supplemented by the reading of original papers. For a class of any size, this is difficult to arrange, as libraries have only one set of most journals and as a heavy influx of students may interfere with the use of the library by research workers. It is thus very convenient to have a collection of classic papers in genetics in a single volume and cheap enough for the students to acquire. The present anthology includes Mendel's original paper in Bateson's translation, and selected papers by Johannsen; Sutton; Bateson and Punnett; Hardy; Morgan; Sturtevant (3); Sewall Wright; Dunn; Muller (2); Bridges (2); Creighton and McClintock; Painter; Beadle and Tatum; Avery, MacLeod and McCarty; Lederberg and Tatum; McClintock; Horowitz and Leupold; Zinder and Lederberg; Watson and Crick; Stadler; Fraenkel-Conrat and Williams; and Benzer. The papers thus cover a wide range of subjects and no less than eight of them have been published since 1950. The selection has a strong U.S.A. bias, but of course we must not forget our heavy debt to American biologists and the limitation imposed by the fact that this volume is addressed to an English-speaking readership. Each paper has an introduction by the editor to indicate to the student its relation to the development of the subject. This is a useful book, and it is to be hoped that similar anthologies with an emphasis on plant and on human genetics will be published in the future.

H. GRÜNEBERG

## ENDOCRINOLOGY

Austin, C. R. (Editor). *Sex Differentiation and Development*. Memoirs of the Society for Endocrinology, No. 7. London, 1960. Cambridge University Press. Pp. x + 198. Price 45s. EACH YEAR THE Society for Endocrinology holds a symposium, this book deals with the